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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,235	02/28/2002	Takashi Fujikawa	Q68691	9670

23373 7590 09/29/2003

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT PAPER NUMBER

1764

DATE MAILED: 09/29/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/070,235

Applicant(s)

FUJIKAWA ET AL.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☒ Claim(s) 4-6 and 10-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                      | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                             | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4,5,6</u> . | 6) <input type="checkbox"/> Other:  |

## DETAILED ACTION

### *Specification*

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it exceeds 150 words in length.

Correction is required. See MPEP § 608.01(b).

### *Claim Objections*

Claims 4-6 and 10-15 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 10180112A in view of Armbrust et al. (US 3,268,295).

The JP 10180112A reference discloses a catalyst composition that comprises at least one platinum-based metal in an amount ranging from 0.1 to 8 mass percent, a halogen in an amount ranging from 0.01 to 3 mass percent, and a support containing boria (1 to 30 mass percent) and alumina (70 to 99 mass percent). See the abstract.

The JP 10180112A reference does not disclose the specific combination of platinum and palladium in the relative claimed amounts and does not disclose the claimed alumina crystallite diameter.

The Armbrust reference discloses catalysts that are effective in petroleum refining processes. The catalysts comprise an alumina support with the alumina having a crystallite size

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in the range from 20 to 40 angstroms. See column 1, lines 11-19; column 13, lines 6-22; and claim 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of the JP 10180112A reference by utilizing alumina having a crystallite size within the range of 20 to 40 angstroms as suggested by Armbrust because catalysts containing this type of alumina are effective for the processes disclosed by the JP 10180112A reference. Therefore, one having ordinary skill in the art would expect that the catalyst of the JP 10180112A reference modified to use the alumina of Armbrust would be effective in the disclosed processes.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of the JP 10180112A reference by utilizing a combination of platinum and palladium in any amount so that the total amount is within the range disclosed by the JP 10180112A reference and in any proportion because each metal is known to be effective individually. Therefore, the combination in any amount and proportion would also be expected to be effective.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morel et al. (US 6,042,716).

The Morel reference discloses a process for hydrotreating a gas oil. Table 1 indicates that the gas oil boils within the claimed range. The process comprises passing the gas oil and hydrogen to a first desulfurization zone where the gas oil and hydrogen contact a catalyst to produce a gas oil having a decreased amount of sulfur. The conditions in the first desulfurization zone include temperatures ranging from 300° to 450°C, total pressures ranging from 2 to 20 MPa,

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and liquid hourly space velocities ranging from 0.1 to 10. Example 1 discloses a hydrogen rate of 400 liters per liter of feed for the first desulfurization zone. The catalyst used in the first desulfurization zone comprises a Group VIB metal (0.5 to 40 wt%) and a Group VIII metal (0.1 to 30 wt%) on an oxide support. Example 1 discloses a sulfur concentration after the first step that is within the claimed range. The effluent from the first step is stripped (i.e., degassed) and is then passed to a second zone where the sulfur amount is reduced further. The conditions in the second zone include temperatures ranging from 200° to 400°C, total pressures ranging from 2 to 20 MPa, and liquid hourly space velocities ranging from 0.5 to 10. The catalyst used in the second zone comprises at least one noble metal (0.01 to 10 wt%), a halogen (0.5 to 15 wt%), and a support such as alumina. See column 2, lines 4-45 and 62-67; column 3, lines 1, 2, and 21-25; column 4, lines 24-44, and Example 1.

The Morel reference does not disclose the specific combination of platinum and palladium in the claimed amounts in the second zone catalyst.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Morel by utilizing a catalyst that contains both platinum and palladium because Morel discloses that more than one noble metal may be present in the catalyst. Therefore, using a combination of platinum and palladium in any amount and proportion such that the total amount is within the disclosed range would be expected to result in an effective catalyst and process.

To the extent that the Morel reference does not disclose all the claimed operating conditions, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Morel to utilize the claimed conditions

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because one would adjust conditions to provide a process that results in a product having the desired disclosed characteristics.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morel et al. (US 6,042,716) as applied to claims 7 and 8 above, and further in view of Armbrust et al. (US 3,268,295).

As discussed above, the Armbrust reference does not disclose that the alumina in the catalyst used in the second zone comprises crystalline alumina having crystallites with diameters ranging from 20 to 40 angstroms.

The Armbrust reference discloses catalysts that are effective in petroleum refining processes. The catalysts comprise an alumina support with the alumina having a crystallite size in the range from 20 to 40 angstroms. See column 1, lines 11-19; column 13, lines 6-22; and claim 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the catalyst of the second zone of Morel by utilizing alumina having a crystallite size within the range of 20 to 40 angstroms as suggested by Armbrust because catalysts containing this type of alumina are effective for desulfurization processes and other hydrocarbon refining processes. Therefore, one having ordinary skill in the art would expect that the catalyst used in the second zone of Morel that has been modified to use the alumina of Armbrust would be effective in the second zone.

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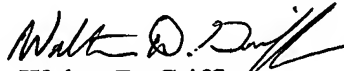
*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses alumina-containing catalyst and processes using the catalyst.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

  
Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG  
September 17, 2003